

# Determination of pesticides in river water using rotating disk sorptive extraction and gas chromatography-mass spectrometry

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The rotating disk sorptive extraction (RDSE) technique was applied to the determination of pesticides in aqueous samples. Pesticides of different polarities were considered in this study: chlorpyrifos, diazinon, fenvalarate, cyhalothrin, cypermethrin, lindane and malathion. The sorptive/desorptive behavior of the pesticides was studied using a rotating disk containing a polydimethylsiloxane (PDMS) phase on one of its surfaces. The analyte polarity was a significant factor in the extraction time; shorter extraction times were required for the more apolar pesticides. The optimum variables for the extraction of all analytes were: extraction time of 3 h, sample volume of 25 mL, rotational velocity of the disk 1250 rpm, desorption time of 30 min using methanol. For pesticides with values of Log Kow > 4, the extraction time can be reduced to 30 min for a quantitative extraction. Under these conditions, recoveries between 76% and 101% were obtained for the target pesticides, and the repeatabi